

CALIFORNIA ENERGY COMMISSION
Water/Wastewater Facilities
Digester Gas Projects

Some wastewater treatment plants have an excess amount of digester gas as a byproduct of anaerobic digestion. Operators can choose from three options when managing digester gas surplus:

- Flaring the digester gas,
- Using digester gas directly to heat water, space, and digester supply, or
- If there is a steady supply of high quality digester gas, operators can run a cogeneration plant. In this case, the digester gas fuels cogeneration engines and generators which produce electricity. Onsite electricity can be used for heating purposes, backup power supply, or for selling to electric utilities.



Cogeneration has proven to be a reliable, efficient, and cost-effective method of power generation, but the cost effectiveness of cogeneration is specific to each particular treatment plant. It is contingent upon factors which include, but are not limited to:

- anaerobic digester gas production,
- alternative electricity trade arrangements,
- electricity or thermal energy use at the wastewater plant,
- regulatory requirements, and
- technology advancements.

In the past, cogeneration was not a feasible option for most wastewater treatment plants. Technology advancements are now opening new possibilities for operators seeking to implement cogeneration systems. Union Sanitary District redesigned a damaged 750 kilowatt engine generator and added a second engine generator fueled by digester gas. The cost of the project was approximately \$2 million, and the energy savings paid for the entire project cost within three years of operation.

Further information on cogeneration can be found on the Energy Commission website at: <http://www.energy.ca.gov/process/pubs/fuelcell.pdf> .

Grant Program Participants:

- Big Bear Area Regional Wastewater Agency
- City of Merced
- City of San Diego
- City of San Mateo
- City of Santa Cruz
- East Bay Municipal Utility District
- Eastern Municipal Water District
- Inland Empire Utilities Agency
- North San Mateo County
- San Elijo Joint Powers Authority
- Union Sanitation District
- Vallejo Sanitation & Flood Control District

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For further information on this and other water/wastewater technology, please visit the Energy Commission Water/Wastewater Process Energy website, located at:

http://www.energy.ca.gov/process/pubs_list.html#water